

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
5 April 2001 (05.04.2001)

PCT

(10) International Publication Number
WO 01/24073 A1

(51) International Patent Classification: **G06F 17/60**

(21) International Application Number: **PCT/FI00/00837**

(22) International Filing Date:
29 September 2000 (29.09.2000)

(25) Filing Language: **Finnish**

(26) Publication Language: **English**

(30) Priority Data:
19992110 30 September 1999 (30.09.1999) FI
20000954 20 April 2000 (20.04.2000) FI
20001255 25 May 2000 (25.05.2000) FI

(71) Applicants and

(72) Inventors: **RUUTTU, Jari** [FI/FI]; Ruukintie 4,
FIN-10330 Billnäs (FI). **TÖRNROOS, Filip** [FI/FI];
Sirkkälankatu 24 C 15-17, FIN-20700 Turku (FI).

(74) Agent: **BERGGREN OY AB**; P.O. Box 16, FIN-00101
Helsinki (FI).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

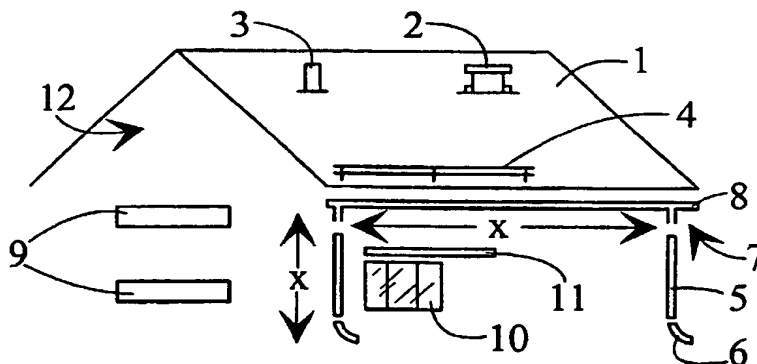
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

— With international search report.

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **METHOD FOR ACQUIRING PARTS BELONGING TO THE EXTERIOR OR INTERIOR OF A BUILDING THROUGH THE INTERNET**



(57) Abstract: The invention relates to a method for acquiring parts belonging to the exterior or interior of a building via the Internet, such parts including: a) profiled metal roofing, b) jointed roofings, c) wall panels, d) gutters and downspouts, e) cornices and friezes, f) skirting boards, g) door surfacings, h) other metal surfacings and i) materials for fastening the above-mentioned parts, j) parquet floorings, k) plank and board floorings, l) wall and ceiling panels, m) floor and ceiling mouldings, n) wooden doors and door handles, o) wooden decorative objects, p) veneered products. A customer in need of

the above-mentioned parts himself logs on to the Internet program of the company manufacturing the said parts, designs the surface patterns, colours, etc., of the parts and, by means of a computer, feeds into the program the dimensions and quantities of the parts, whereafter the customer transmits the data regarding the parts designed by him to the data file, i.e. order service, of the company manufacturing the parts, the program of the parts manufacturing company selects the suitable manufacturing methods and work processes by means of which the dimensions and outer appearances of the parts can be produced, and the company stores or sends to the customer the completed products designed by the customer.



WO 01/24073 A1

Method for acquiring parts belonging to the exterior or interior of a building through the Internet

The present invention relates to a method for acquiring parts for the exterior or interior of a building *via* the Internet, such parts including:

- a) profiled metal roofings,
- b) jointed roofings,
- c) wall panels,
- d) gutters and downspouts,
- 10 e) cornices and friezes,
- f) skirting boards,
- g) door surfacings,
- h) other metal surfacings and
- i) materials for fastening the above-mentioned parts,
- 15 j) parquet floorings,
- k) plank and board floorings,
- l) wall and ceiling panels,
- m) floor and ceiling mouldings,
- n) wooden doors and door handles,
- 20 o) wooden decorative articles,
- p) veneered products.

In the methods known *per se* for ordering various products *via* the Internet, the desired products must be selected from a predetermined assortment. For example, the ordering software pertaining to buildings and interiors comprises only known ready-made options. Corresponding products pertaining to construction and home interiors can also be found in various product catalogues.

The object of the present invention is to provide a novel method by which a customer may dimension and design parts belonging to the outer shell of a building, such as a detached house. The method according to the invention is characterized in that a customer in need of the above-mentioned parts himself logs on to the Internet program of the company manufacturing the said parts and designs the surface patterns, colours, etc., of the parts and, by means of a computer terminal, feeds into the program the dimensions and quantities of the parts, whereafter the customer transmits the data regarding the parts he has designed to the parts manufacturer's data file, i.e. order service, and the parts-manufacturing company selects the suitable

manufacturing methods and work processes by which the dimensions and outer appearances of the parts can be produced and stores or dispatches to the customer the completed products designed by the customer.

5 The method is based on the simple solution that the program devised for digital control of predetermined work processes is at the same time a program by means of which parts required for construction are designed, the designing thus being done by the customer.

This means that all of the work processes can be created digitally, i.e. a digital signal, in a controlled form, can be converted into the desired end product.

10 For example, by using a processor and a program, a metal and a surface pattern can be converted into direct current or a pulse, or pneumatics can be controlled so that a surface pattern and dimensions created by the customer can be produced, for example, by compressing, by laser cutting or, for example, by glazing, when the product is positioned appropriately at a so-called work station, i.e. the 0-point of the product
15 tallies with the 0-point of the digital data file in an xyz coordinate system.

The method is thus completely novel: the customer/user is *via* the Internet, by mediation of his own PC, in contact with the data file, i.e. website, of the manufacturing company.

20 From the website the customer gains access to the program free of charge, which enables him to design parts belonging to a building in digital form on his own computer.

When the customer has, by using the program, completed a work he approves, i.e. the parts are as he desired, he transmits the pictures back to the data file of the manufacturing company, and production can begin immediately.

25 The program devised for the method is compatible in terms of both production and design, and both the customer's design work and product control are carried out using one and the same program, wherein information is transmitted in digital form *via* the Internet between the customer and the manufacturer.

30 The program has been devised so that it can be used for designing only what can be manufactured, i.e. what is to be manufactured, from what material, and how the manufacture is to be carried out, i.e. the work process, have all been decided in ad-

vance. Thus the program allows the design of only products that can be manufactured in the production process.

Since all operations, i.e. the design, the transmission from the Internet, i.e. the program and the completed design work, and the production, i.e. production control,
5 are performed in digital form, the completed product is always 100 percent what the customer ordered.

Different embodiments of the invention are presented in the non-independent claims of the set of claims.

Since the product segment is wider and the geometry of the partial products can be
10 affected, it is advisable to make the program package going to the customer such that it can be broken up into so-called sub-programs, modems, in which case one program segment will always comprise one product or one further processing method or suchlike. Of course, the customer may take the whole package, but it may
15 be easier always to take the necessary segment. Otherwise the program itself may become too cumbersome. Besides, we cannot know in advance whether the customer intends to design only, for example, one panel or, for example, an entire larger project, such as a ship or a hotel.

The customer may take the whole program or a part thereof, whichever he deems best, or he may directly use the Internet connection, the so-called active direct line.
20 In large complicated projects for which the customer's own PC capacity is not sufficient, for example, hotels, ships, etc., it is also conceivable that a registered customer does only part of the work himself, issues instructions to the manufacturing company or to a third party, and receives in return a completed work, although all are under the heading "customer."

25		Segments	
	Manufacturing	program 1	Customer
	company's	program 2	&
		program 3	User
	"entire program"	program 4	&
30		program 5	Ordering party
		program active direct	

The program in the method sets limits on the customer and allows freedoms. The customer cannot, without special permission, affect the so-called state of the art of

the product, which means the technical constructions, the technical structure or the like, for example the joints of a copper roof. At least thickness is one factor in which a minimum dimension cannot be given.

5 There is thus incorporated into the program a so-called "construction checking program (ccp)", which makes sure that the work carried out fulfils the requirements relating to the strength of materials. The program also inquires the targeted use and the country, unless this is clear from the contact. In any case, the program has been devised so that the ccp always ensures that a faulty product cannot be ordered without special permission. The ccp also indicates this to the customer and gives a proposal for correction.

The program is also designed to indicate the material, resistance to weather, resistance to chemicals, and other essential facts which it is advisable for the customer to know and which he has the right to know.

15 The program can also be devised so that the creation of only certain material thicknesses and constructions above certain specific minimum requirements is allowed.

There is also incorporated into the program a ccp + state line, which means directives by the public authorities and stipulations in the legislation governing construction, for example, according to the country or, for example, the EU, within the program.

20 Within the ccp the program takes into consideration

1. factors of strength of materials
2. factors of structural engineering
3. directives issued by public authorities, such as safety standards
4. stipulations in legislation governing construction (building standards)
- 25 5. stipulations concerning sub-areas, for example ships → Norske Veritas, i.e. the directives (recommendations) of rating institutions.

A product harmful to the customer or the environment or constituting a health hazard can easily be ruled out, i.e. the customer will not even be able to create one.

30 The other limitations of the program are always associated with the state of the art and technical construction of the product, which the customer thus cannot affect without the permission of the manufacturing company, and will not violate the above-mentioned items 1-5, if the question is of a commercial public project.

In order to use the program, the customer agrees to comply with the stipulations of the manufacturing company regarding what is stated above.

The program thus takes into account technical and legal aspects, which, of course, sets limits, and there are also production technology reasons also setting limits, but
5 as a whole the customer has complete freedom with respect to surfaces.

There may also be incorporated into the program segments of the so-called "architectural view" program, including the existing product segment of the target area, for example, copper roofs, etc.

The so-called passive part can be expanded endlessly, depending on the market
10 situation, general interest, etc.

The main design program has, of course, been devised so as to be easy to use, i.e. the customer need not take a stand regarding the actual production technology and process, and also not the technical solutions. The main program and the subprograms give the user free hands for planning without needing to understand the different technologies.
15

As has been stated in daily newspapers, via the Internet the customer has access to a program by means of which it is possible to decorate buildings both on the exterior and in the interior, but the products are in a completed form. The customer is not able to design the product himself; he has to select from the completed surfaces and
20 products offered. The present application deviates from the other known programs.

The production technology includes the following methods:

A. Coating methods

1. Painting
2. Lacquering
- 25 3. Staining, alkaline wash
4. Aqua graphics
5. Other coating method, for example lamination

B. Machining methods

1. Laser machining/engraving
- 30 2. Laser pyrography/markings
3. Hologram production methods
4. Laser printing technologies

5. Colour/inkjet technologies
6. Silkscreen printing technologies
7. Offset and other printing technology
8. Compressed-air/electric blasting technology
- 5 9. Piezoelectric technology (electricity)
10. Mechanical milling/engraving
11. Laser or water jet cutting
- C. Work processes
1. Sawing
- 10 2. Planing
3. Grinding
4. Turning
5. Pressure gluing/moulding
6. Pressing/Compression
- 15 7. Drilling

The invention is described below with the help of an example, with reference to the accompanying drawings, in which

- | | |
|--------------------|--|
| Figure 1 | depicts the metal parts of a building, |
| Figure 2 | depicts the dimensions of a metal-sheet roof, |
| 20 Figures 3 and 4 | depict the jointing of a metal-sheet roof, |
| Figure 5 | depicts a component of a metal-sheet roof, |
| Figures 6-8 | depict a component and the jointing technique, |
| Figure 9 | depicts the surface patterns of a component, and |
| Figures 10-11 | depict the jointing of a component, |
| 25 Figure 12 | depicts a parquet floor in an axonometric representation, |
| Figure 13 | depicts a parquet floor as seen from above, |
| Figure 14 | depicts a wall panel, |
| Figures 15 and 16 | depict patterns in wood surfaces, |
| Figure 17 | depicts an end view of a parquet flooring board, |
| 30 Figure 18 | depicts an end view of a board of another parquet floor, and |
| Figure 19 | depicts an end view of the strips of a block parquet. |

The customer wishes to have in his building, for example, the copper component of Figure 1, which is to be an enamelled four-colour high-resolution picture of his garden, in which he is standing with his dog, i.e. a photograph-level resolution. In addition, he wishes to have a silver frame around it. How to proceed?

1. Since the picture of the garden, of himself and his dog are not in the same picture, he must first make such a picture.
2. He can with his own PC, using a subprogram of the new main program, a so-called photo modification program or a corresponding program of some other company, modify the picture to be as desired.
3. The picture is ready.
4. The customer transfers the picture to the manufacturing company's program and selects the panel type, for example "model" 966.
5. The customer gives the panel dimensions, for example 1000 mm x 450 mm.
6. The program reports that the picture has been approved and meets all the standards.
7. The customer transfers the picture he has created onto the panel he has chosen, checks the colours, etc., approves, and orders. At the same time he sees the delivery date, the price of the product and the transportation costs. The customer may pay with, for example, a VISA card.

The following steps are carried out at the manufacturing plant:

1. The program selects the work processes in the correct order.
2. Production technologies → work processes → C for example 4, and from B 10, laser cutting.
3. Makes the physical piece on the production line.
4. The physical product is completed, material Cu 1.2 thick, dimensions the given ones 1000x450, and fixing method, for example frk, i.e. a screw.
5. Subsequently selects from the work processes B and, for example, four-colour/inkjet process transfer by means of a film, i.e. D.
6. The work can begin and is completed +20 min, and the transfer film is placed on the actual copper panel.
7. Transfer to kiln temperature +625 °C, time 46 min.

8. Product removed from the kiln.
9. Transfer to silver coating of edges by electrolysis process → production technologies A point → 4.
10. Time 10 min.
- 5 11. Product removed.
12. The desired, for example, rose pattern in the silver is produced → work technologies B 1 laser engraving, time 7 min.
13. The product is complete, and is packed and dispatched to the customer.

10 As noted, the customer will create the product he desires, but he need not know or understand anything about the actual production process.

Below, reference is made to Figures 1-11.

- 15 2.0. The customer dimensions the roof Fig. 2, metal-sheet roofing 1, the essential related dimensions and partial factors, such as the size and location of the chimney 2, the same for the ventilation duct 3, and the gable angles 4 of the roof.
- 2.1. Next the customer shifts to Fig. 1 and gives the roof an angle α , for example 28° .
- 2.2. The customer selects a seam or joint type, of which there may be, for example, 30, and a segment width.
- 20 2.3. The customer selects the surface structure, i.e. surface profile, for example. Fig. 9 items 2 and 3, or creates his own surface profile.
- 2.4. The customer has selected both the surface profile and the joint type and has approved these with confirmation.
- 25 2.5. The program gives a proposal for the segment positions and also for the positioning of the transverse joints.
- 2.6. If the customer also approves this, the program gives a full picture of the roof, and, of course, the customer can zoom and view a 3D picture at a desired angle.

- 2.7. The customer has now used of the main program the subprogram "roof making", now he can shift to, for example, Figure 1, peripheral products "roofing."
- 2.8. Now the customer can begin to dimension other products, such as 8 gutters, 5 downspouts, 6 downspout shoes, and 9 weather flashings.
- 5 2.9. After approved dimensions, the customer may further refine the surfaces of the above-mentioned products by some proposed further refining process A, B or C, decorative surface, panel 10 is an example already given.
- 2.10. The customer knows the price level all the time as the work progresses.
- 2.11. The customer places an order and receives for it a confirmation and other
10 terms of delivery.
- 3.0. Especially item 2.9. is important to note; the customer thus first creates a 3-dimensional framework by using the program, subject to the freedoms and limitations given, and thereafter carries out within the program the actual design step, by means of which the actual final outer appearance is affected, in
15 which case any of the work processes A, B and C is used.

This also relates to the other products mentioned in the present application, such as downspouts, gutters, panels and strips, etc.

The improvements in the state of the art, which are mentioned in the application, actually relate to a method of making a roof of metal and for sealing the joint, and to
20 the method of installing the roof.

Next, reference is made to said Fig. 3 → Figs. 10 and 11.

Since all of the sub-areas of the roof are designed within the framework of the program and the parts are placed in their appropriate places electronically, all of the parts can be made complete also physically before the installation. Therefore certain
25 technical improvements can also be implemented as compared with the current practice.

Of the surface construction of the roofing sheet itself, shown in Figs. 5, 6, 7 and 8, one example is a so-called lapped metal-sheet roof. There are, of course more laps than the presented single model.

The so-called lapped metal-sheet roof concerned involves a technical and aesthetic problem in that, if it is desired to close the joint by lapping, which is an option found good and durable, the metal must be suitable for the purpose, i.e. a soft, annealed grade.

- 5 In this case, also the principal surface area, Figure 5 and Figs. 6, 7, 8, reference numeral 1, is soft, which is not good in terms of installation. Since the metal sheet is flat, its dimensions change and it is in general difficult to handle. On the other hand, its use is also problematic because snow, walking on the roof, etc., have a negative effect when the load coincides with a so-called protrusion, and additionally there
10 tend to form fractures, or stresses which with time develop into holes or fractures.

It would thus be advantageous if the lap were soft and the main surface area were harder and more rigid; in particular this is shown in Figure 5, Figs. 6, 7 and 8, where 1 is the main surface area and thus harder and/or more rigid.

- 15 Technically it is easy to implement the pressing and stamping by a technique in which the pressing heads and the paths of movement are limited to the desired main surface area.

- The same can be implemented using rolling technology so that the roller does not touch the edge or lap area, but the area between the ends, Fig. 6, 3 and 4, would in this case remain hard. This can be corrected so that the end pieces are, for example,
20 soldered to the sheet-metal part itself, Fig. 6, 7, 8.

The pressing and stamping method is more versatile, since it is easy to replace the heads of the so-called press/stamp, whereby a large number of freely mouldable patterns and surfaces are obtained.

- 25 Technically the matter is clear, since the machinery is known and has been in use for at least 100 years, but not as the option concerned.

Lapping and sealing

- The general practice in sealing is to use a single-component sealing compound, but since there have been problems in its weather resistance and aging, the aim has already been to apply two components to the joints on the roof during the actual in-
30 stallation step, because specifically as regards copper-sheet roofing and steel-sheet roofing, the sealing compound has in general even been totally omitted.

Now two methods are presented which make it possible that a sealing compound no longer needs to be applied on the roof during installation.

The first method is based on applying a polymer silicon, urethane, etc., directly to the desired spots of the metal sheet automatically in the plant.

- 5 In the second method, a suitable strip is extruded from the desired sealing material, for example, those mentioned above, which strip is then fastened automatically in the plant a) mechanically or b) with an adhesive, or, if so desired, it can be fastened on site.

10 Figure 3 depicts a schematic representation of a method wherein there is fastened to the right-hand side metal sheet 2 or the left-hand side metal sheet 1, by some method presented, a seal surface/strip 3, which can be applied jointlessly. According to Fig. 6, the longitudinal seal 4 is continuous with the transverse seal surfaces 5. The seal can be applied before or after the actual bending of the side surfaces 3, 6-7.

15 Figures 7 and 8 depict a situation which also shows that the rigid/hard surface 1 ends where desired 2, where the soft area up to 3, i.e. the lap area, starts and where a seal surface is located. The vertical lap is shown more clearly in Figures 10 and 11, which show that the seal surface 4 may be either male 10 or female, Fig. 11, and be fastened in the manner depicted.

For interiors:

- 20 In a plank or board floor, which is perhaps the best known and most common floor type in the world, the basic wood type is, of course, dependent on where the target is located globally. One example is tongue-and-groove flooring, but the butment can just as well be of another type, or there may be no tongues. This is not relevant in terms of the invention, nor is the type of wood. However, the customer can, within
25 the framework of the program, affect both, since the inventional idea is specifically that the customer creates and orders a floor or a wooden component of the desired type.

30 In Figure 12, the floor is formed of tongue-and-groove 2 flooring planks 1. The customer has, for example, first selected the type of wood, for example, pine, and then created a data file, i.e. a pattern and the colours. Of course, it is possible first to create a pattern and then to select the type of wood. In Figure 1 the customer has created, for example, a starfish 4 and 5, a cone 7, a branch 8, and a birch leaf 9. Numeral 10 refers to a space in which a different type of wood is embedded.

In Figure 12 the flooring planks 1 run in parallel. This is only one example, and the customer can, of course, place them in different directions, or the flooring planks 1 may be of different widths and also of different varieties of wood.

5 Of course, in making the flooring plank, before it is possible to refine it further, work processes 1, 2 and 3 of the above-mentioned production technologies C have been used. Within the program, the customer may select among many different architectures/designs, create his data file, modify and change it, and finally approve it.

In creating the pattern in Figure 12, the customer knew the different variations, of which some examples are now presented.

10 A. The customer wishes to have the patterns burned on the wood, in which case the option offered by the manufacturing company is laser machining/laser pyrography B1 and 2. The patterns thus created can produced by laser pyrography (see Figure 17) directly on the wood 5 or, for example, on top of priming lacquer 2. It is also possible proceed by removing, by means of an engraving laser, an area of the
15 priming lacquer 2 in which it is then possible to fill, i.e. coat, with a colour lacquer, stain or other material those areas in which there is no longer any of the said priming lacquer.

It is also possible to produce the presented pattern by coating directly onto the wood 7 or on top of the priming lacquer 2 layer by coating, for example, using technolo-
20 gies B5, 8, 9 or by means of a transfer film by technologies B 4, 5, 6, 7 indirectly onto the product itself. If it is desired to have, for example, a different type of wood in the area of the patterns, the desired thickness of the wood is removed, Figure 17, area 6, or a hole is drilled and a piece of the desired type of wood is installed in the formed recesses, it is fixed with, for example, glue and is sanded after drying. The
25 recesses are formed by, for example, technologies B 10 and/or 11.

An advantageous method of producing the desired pattern is that the customer selects the variety of wood and what is to be done to it.

In the manufacturing plant the correct work technology, recess, is selected, for example B 10 and/or 11, and the wood veneer itself, for example, 2 mm thick, is cut
30 out from a larger sheet by a technology, for example B 11.

In this case the parts will fit together very precisely.

The work can be performed directly or indirectly, for example, by using a transfer film, directly onto the wood itself or onto a layer of lacquer on top of it, and the pattern can be formed freely, using different varieties of wood, it can be painted, lacquered or stained.

- 5 In the example of Figure 13, the creating of a parquet floor is carried out in the same manner as in Figure 13, but the structure itself is different, since the parquet floor is formed, as in Figure 18, from thin or thick veneers, 1, 2 and 3, or they may also have a thin surface veneer 4, which is usually flawless and more expensive.

- 10 Block parquet (Figure 19) is, as even its name indicates, formed from blocks which are solid wood 3 or so that on top of solid wood 1 there is a thin veneer layer 2, usually surface lacquered, but may also be without lacquer.

- Figure 13 depicts a parquet segment 1 formed in the manner depicted in Figure 18 and in general so that the surface shown in Figure 13 is made up of many smaller veneers 3 laminated on top of the base. One segment is in general 200 mm width →
15 max 6 m length, and the border of a segment is tongue-and-grooved 2 or without tongue-and-groove. The customer may selected from many varieties of wood, which may further have been treated in different ways, for example, stained, colour lacquered, laser patterned or provided with some other pattern. The same applies to the compass 5 depicted in Figure 13, in which wood has been used in the manner described above to form the desired pattern.
20

Since all of the work processes, the treatment of the pattern, the process control and the data file created by the customer, are in digital form, as is the actual data transfer *via* the Internet, the customer can advantageously order only a sample piece, i.e. a part of the whole.

- 25 Thereby the customer can make sure that the product will be what he wants.

Another great advantage is that the different work processes can be implemented economically and precisely even if the whole work is large in size.

This means that the size of the object of the work need not have the size of the whole product (floor) but, for example, the size of one segment.

- 30 If the production processes of the production technology were not digitally controllable or treatable, for example, during the creating of complicated patterns, the customer's data file, which is, of course, also in digital form, would have no value.

Meanings of the words used above:

Wood (door, floor, ceiling, ceiling and floor mouldings, and wall) means that the product is made of solid wood, for example, birch, maple, oak, elm, pine, etc., and it may be tongue-and-grooved, planed or milled to its shape. The wood may also be
5 compressed to higher density and hardness in a so-called heat press, usually with other materials, such as maleic acid, etc.

Parquet (floor) is also wood, but made in the same manner as a sheet of plywood, i.e. from veneer, and is usually tongue-and-grooved. There also exists so-called block parquet, in which case the entire separate piece is thicker than veneer. Veneer
10 is 0.3-2.5 mm thick, whereas a block is 2.5-10 mm thick.

Laminate (facings, doors, floors, furniture, etc.) is in general a plastics-based, film-like or sheet-like surface, which is laminated to the actual product, for example door, table, etc. In this case the base material is usually MDF or a chipboard-type material, but plywood is also commonly used.

15 Veneer-coated products include furniture, floors, doors, mouldings, walls, etc.

MDF-based products include doors, mouldings and surfaces.

In the following, design and production through an Internet program is presented for wood-based products.

In this case the customer selects the type of wood, for example birch, as well as the thickness and the width of the product, and creates the desired design with the help
20 of the Internet program.

Figure 12 shows an example in which the floor planks 1 are patterned by pyrography, B 1 or 10, by using laser, which burns the surface of the wood in accordance with the program created. In this case the desired surface can be created directly on
25 the wood or on lacquered wood.

Thereafter, if the process has been directly onto wood, the laser-patterned surfaces can also be stained (coloured) with a stain of a different colour, each separately, by process B 7 or 8, whereafter the wood surfaces can be lacquered. This means that laser can be used for delimiting the surface from which the colour changes in each
30 given case.

In Figure 12 it is possible to make many planks simultaneously or one plank at a time. This makes no difference in itself, since in either case the final result is the same.

5 Figure 13 depicts a parquet floor in which the outermost veneer layer has been varied (designed) using the customer's data file.

In the program there may be available up to, for example, 50 varieties of wood, in which case at a work station, which is made up of at least B 10, a laser or water jet cutter, the veneers are cut on the basis of the data file (design) made by the customer.

10 In this case, for example, the veneers, in general 120 x 200 cm, may be positioned so that the veneer to be used can always be easily transferred to the work station. The veneer may also be a non-turned veneer, i.e. a wooden surface (planed). The work station may be a large so-called suction table, to which the veneer is attached by suction for the duration of the process. In this case the veneer is smooth and can
15 be cut, for example, B 10 by laser, in accordance with the data file.

Thereafter a robot having a linear movement and suction cups at the end of the gripping surface grips the cut veneer and places it precisely where it belongs.

This process is continued until the surface, i.e. the product, has been coated with veneer.

20 What has been stated above also applies to a block parquet construction. In general a block parquet is made in the same manner as a veneer parquet, but a block parquet can also be installed directly on a floor base.

It is also conceivable that the surfaces where there will be a surface deviating from the standard are cut off from a standard parquet floor by mechanical milling, such as
25 B 6.

In other words, the customer may design a parquet floor entirely from scratch or modify a standard floor.

In this case the program has completed standard surfaces and surfaces to be added.

In the examples presented above, the Internet has been used, but it is self-evident
30 that even other prior known or future user interfaces can be used.

Claims

1. A method for acquiring parts belonging to the exterior or interior of a building via the Internet, such parts including:
 - a) profiled metal roofings,
 - 5 b) jointed roofings,
 - c) wall panels,
 - d) gutters and downspouts,
 - e) cornices and friezes,
 - f) skirting boards,
 - 10 g) door surfacings,
 - h) other metal surfacings and
 - i) materials for fastening the above-mentioned parts,
 - j) parquet floorings,
 - k) plank and board floorings,
 - 15 l) wall and ceiling panels,
 - m) floor and ceiling mouldings,
 - n) wooden doors and door handles,
 - o) wooden decorative objects,
 - p) veneered products,
- 20 characterized in that a customer in need of the above-mentioned parts himself logs on to the Internet program of the company manufacturing the said parts, designs the surface patterns, colours, etc., of the parts and, by means of a computer terminal, feeds into the program the dimensions and quantities of the parts, whereafter the customer transmits the data regarding the parts designed by him to the data file, i.e.
 - 25 order service, of the company manufacturing the parts, the program of the parts manufacturing company selects the suitable manufacturing methods and work processes by means of which the dimensions and outer appearances of the parts can be produced, and the company stores or sends to the customer the completed products designed by the customer.
- 30 2. The method according to Claim 1, characterized in that the designing of the parts and their manufacturing process are carried out in a completely digital form.
3. The process according to Claim 1 or 2, characterized in that the customer first selects the basic material for the parts, for example, some known metal such as cop-

per, brass, aluminium, stainless steel or some alloy, whereafter the surface pattern and the colour tones are designed in further refining methods.

4. The method according to any of the preceding claims, characterized in that the coating processes for the parts include:

- 5 a) silver coating, such as chemical metal coating,
- b) vacuum vaporization metal coating,
- c) chemical metal coating combined with glazing or ceramic coating and firing,
- d) electrolytic coating,
- e) ceramic coating and
- 10 f) patination,
- g) painting,
- h) lacquering,
- i) staining.

5. The method according to any of the preceding claims, characterized in that
15 the work processes belonging to coating include:

- a) laser machining/engraving,
- b) hologram manufacturing technologies,
- c) laser printing technologies,
- d) colour/inkjet technologies,
- 20 e) silkscreen printing technologies,
- f) compressed-air/electric blasting technologies,
- g) piezoelectric technologies,
- h) offset and other known printing technologies,
- i) mechanical milling/engraving, and
- 25 j) laser and water jet cutting.

6. The method according to any of the preceding claims, characterized in that the work processes belonging to the forming of the parts include:

- a) edging technologies,
- b) stamping/pressing technologies,
- 30 c) deep drawing and eccentric turning,
- d) soldering, welding and other metal jointing technologies,
- e) die/free casting and
- f) other known forming technologies.

7. The method according to any of the preceding claims, characterized in that the customer first selects the basic material, for example, oak panel, for the wooden part, whereafter some special surface pattern, such as fallen leaves, branches, cones, etc., as well as the desired colour tones, are designed for the surface.

1/6

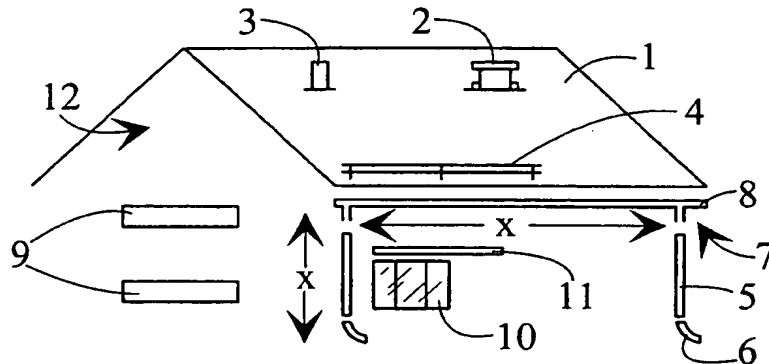


Fig. 1

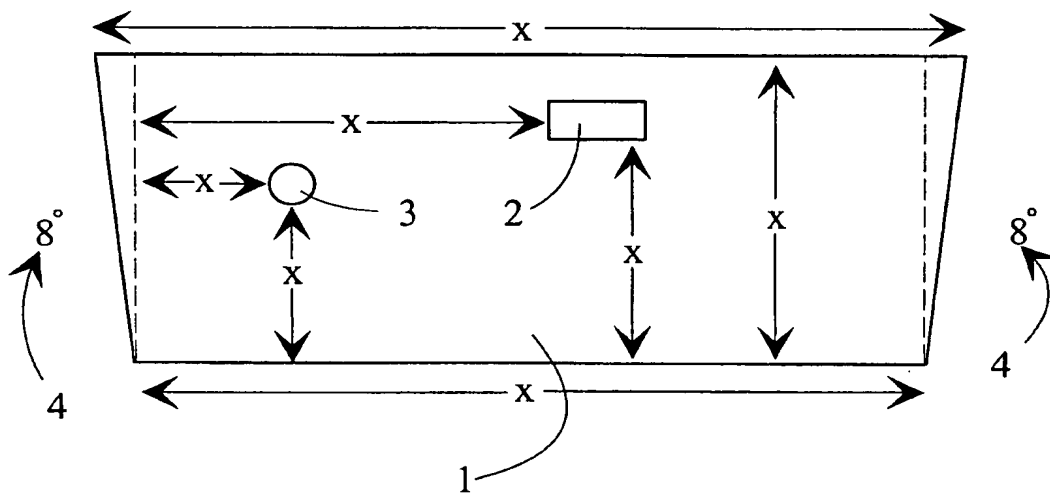


Fig. 2

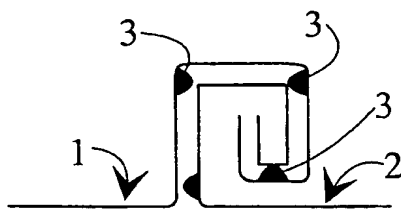


Fig. 3

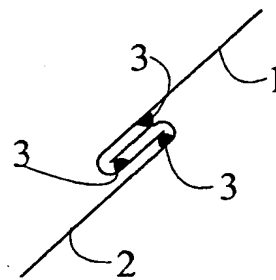


Fig. 4

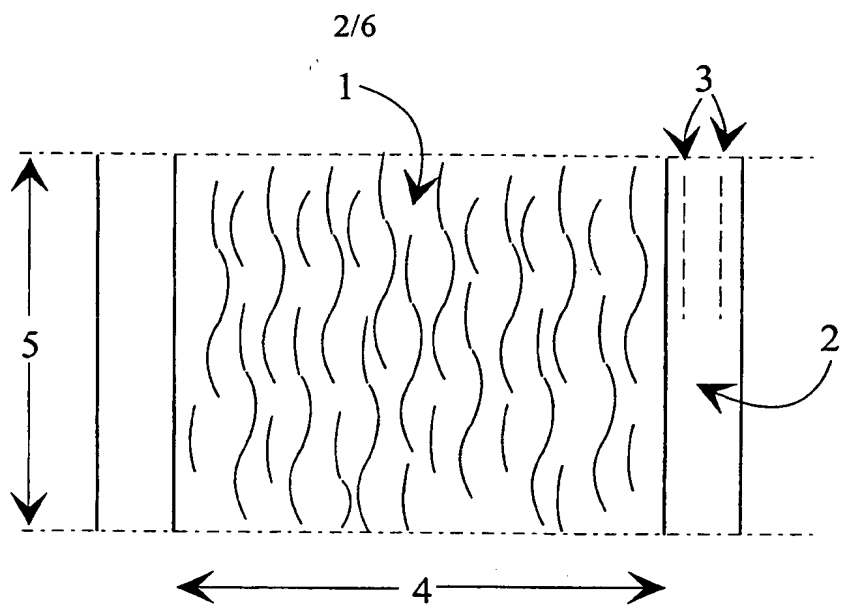


Fig. 5

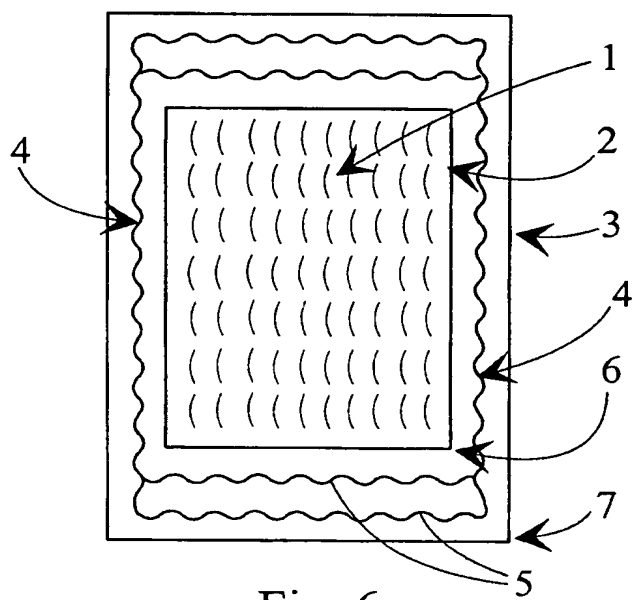


Fig. 6

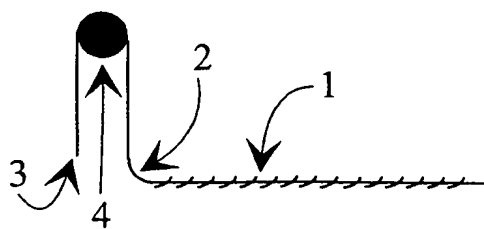


Fig. 7

3/6

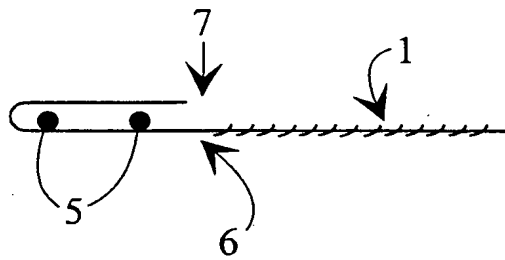


Fig. 8

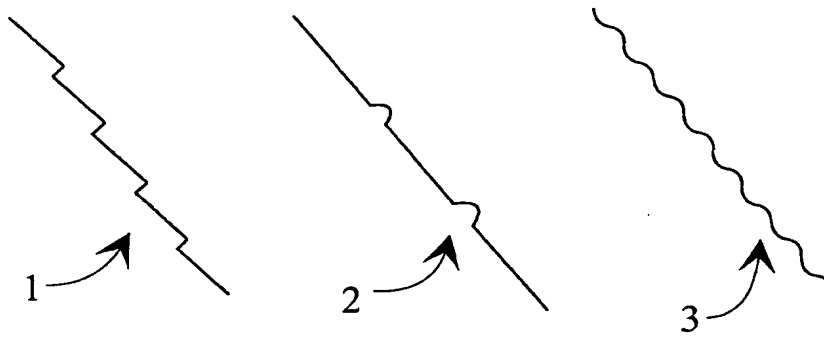


Fig. 9

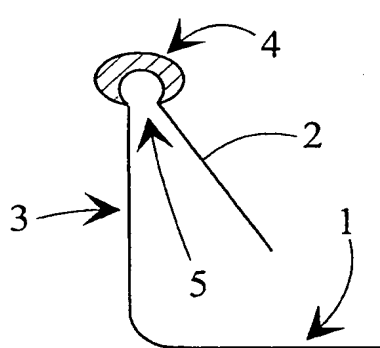


Fig. 10

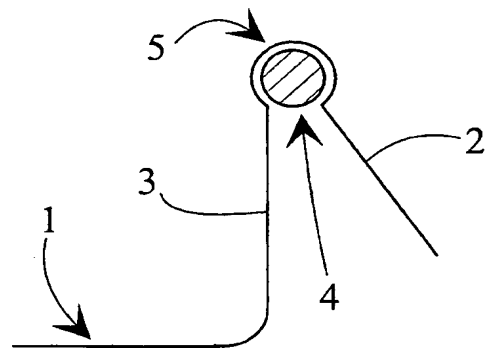


Fig. 11

4/6

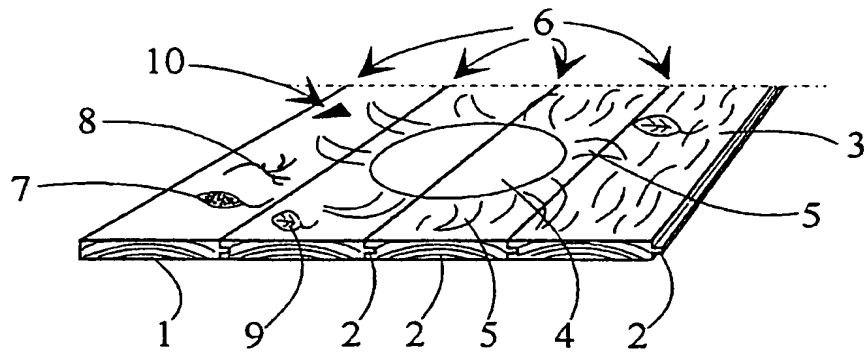


Fig. 12

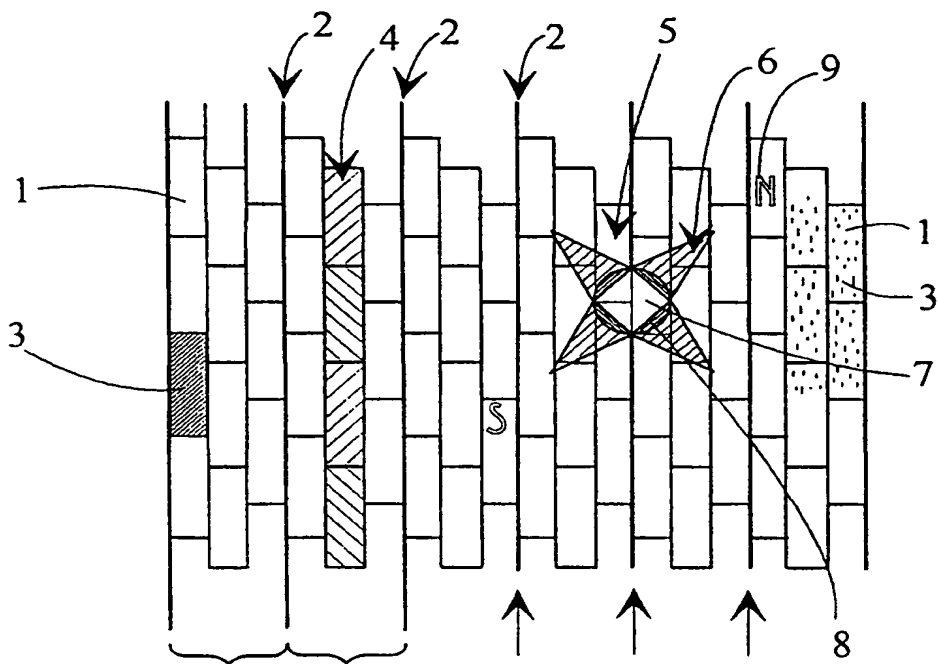


Fig. 13

5/6

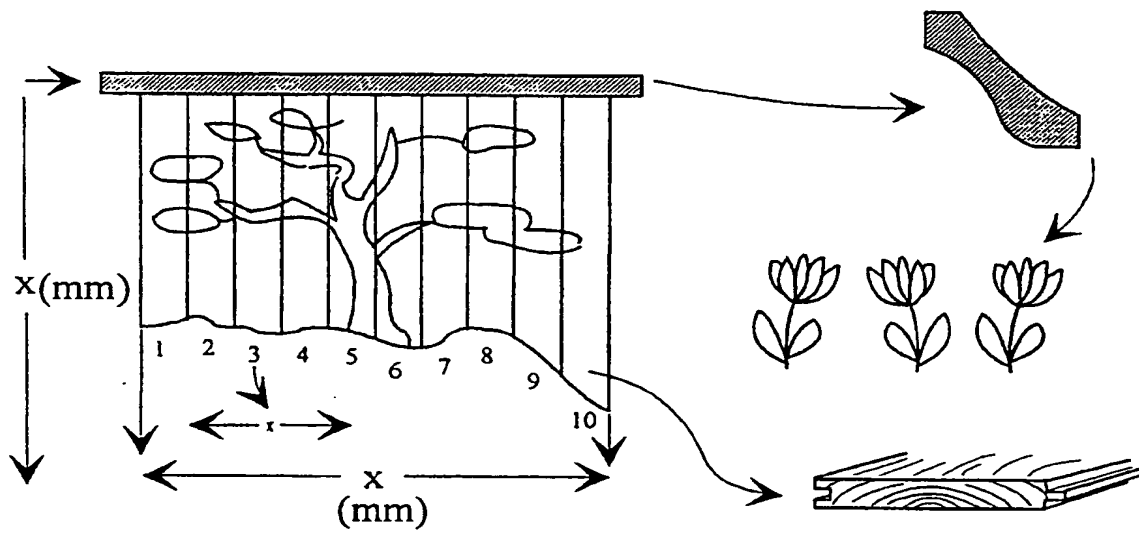


Fig. 14

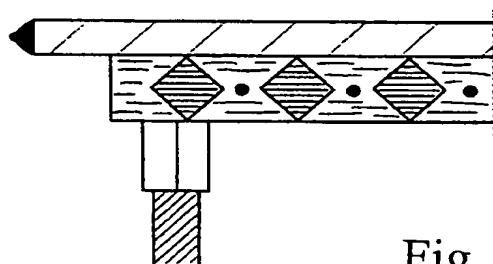


Fig. 15

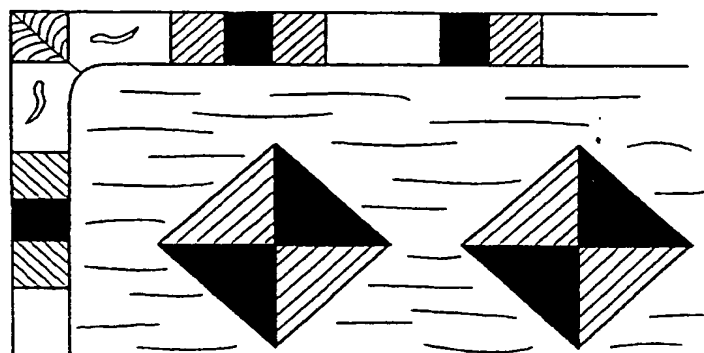


Fig.16

6/6

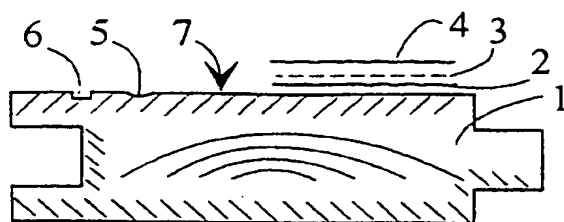


Fig. 17

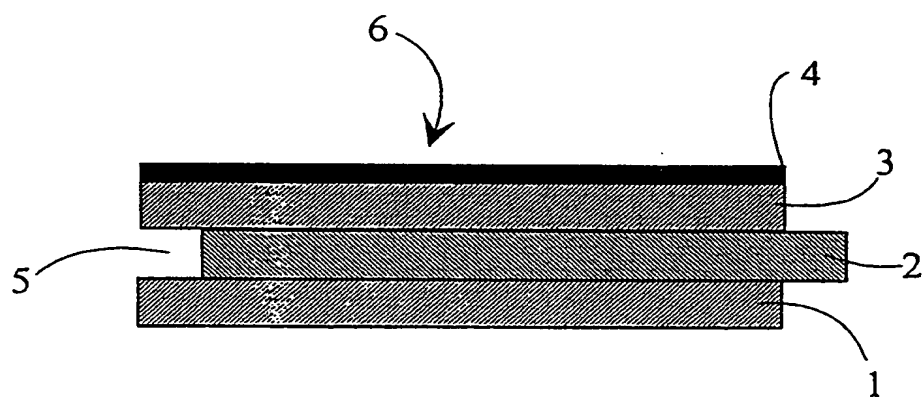


Fig. 18

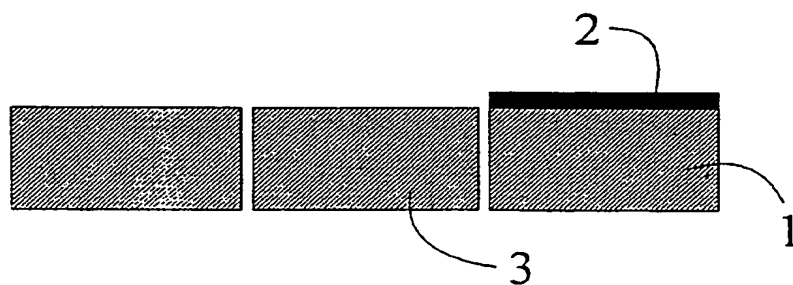


Fig. 19

INTERNATIONAL SEARCH REPORT

International application No.

PCT/FI 00/00837

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: G06F 17/60

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,N0 classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 9852144 A1 (METROLOGIC INSTRUMENTS, INC.), 19 November 1998 (19.11.98), the whole document --	1-7
A	US 5570292 A (ABRAHAM ET AL), 29 October 1996 (29.10.96), the whole document --	1-7
A	EP 0801355 A2 (BAKER HUGHES INCORPORATED), 15 October 1997 (15.10.97), the whole document --	1-7
A	WO 9815908 A1 (CITIZEN WATCH CO., LTD.), 16 April 1998 (16.04.98), the whole document -- -----	1-7

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"I" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"I" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

8 January 2001

Date of mailing of the international search report

15 -01- 2001

Name and mailing address of the ISA/
 Swedish Patent Office
 Box 5055, S-102 42 STOCKHOLM
 Facsimile No. +46 8 666 02 86

Authorized officer

Jesper Bergstrand /OGU
 Telephone No. +46 8 782 25 00

INTERNATIONAL SEARCH REPORT

International application No.
PCT/FI00/00837

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 1-7
because they relate to subject matter not required to be searched by this Authority, namely:
.../...
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/FI00/00837

A method of doing business.

According to Rule 39 no search is required since the subject matter of the claimed invention concerns a method of doing business.

Despite this fact a search has been performed and thus a search report has been established.

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/FI 00/00837

Patent document cited in search report			Publication date	Patent family member(s)		Publication date
WO	9852144	A1	19/11/98	AU	7570098 A	08/12/98
				CN	1255217 T	31/05/00
				EP	0983570 A	08/03/00
				GB	2341251 A	08/03/00
				GB	9926738 D	00/00/00
				US	6085978 A	11/07/00

US	5570292	A	29/10/96	CA	2142484 A	15/08/95

EP	0801355	A2	15/10/97	JP	10063712 A	06/03/98

WO	9815908	A1	16/04/98	CN	1237255 A	01/12/99
				EP	1020807 A	19/07/00
